**Background:** NASA Goddard Space Flight Center (GSFC) designs and builds composite structures. These structures are typically carbon fiber reinforced polymers. GSFC manufactures composite structures from carbon fibers pre-impregnated with polymer resins, and from dry fibers broad goods that are subsequently infused with resin. GSFC has the need to automate the ply cutting process for pre-impregnated carbon fiber composites, dry fibers broad goods, and film adhesives. This SOW defines the requirements for an automated ply cutter GSFC will use to more efficiently produce composite structure.

**Requirements:** Provide an automated ply cutter with the following capabilities:

**The Ply Cutting Machine Shall have**

A minimum cut area of 48 inches wide x 60 inches long

A horizontal working surface with a gantry cutter

The ability to hold material to the table securely while cutting is being performed

The ability to adjust cutter pressure

The ability to adjust cutter speed

The ability to cut at speeds of at least 40 inches per second.

Cutters for single ply cutting (0.002 inch thick)

Cutters for deep ply cutting (up to 0.1 inch thick)

The ability to change cutters easily

A cutting accuracy of 0.06 inch or better

A method to label individual ply cuts identification of each individual ply cut

The ability to accommodate cutting with a variety of knives, such as straight knives and wheel knives, and punches

**The ply cutting data system shall have a user interface with**

A graphical user interface

File storage resident to the unit

A method to rapid transfer of data from Computer Aided Design tools to the control unit

The ability to manually nest plys for layout and cutting

The ability to automatically nest plys for layout and cutting

The ability to use computer aided design software files common to industry.

If the system is PC based, Windows 7 shall be the operating system.

**Installation, Training and Warranty**

Provide installation and operator training at Goddard Space Flight Center, Greenbelt, Maryland.

Be powered by common 110V or 208/220V power

Provide Machine checkout to include, taking dry material and cutting a patern out of it, taking pre-impregnated material and cutting a pattern out of it.

Provide 90 day minimum warranty

**Period of Performance:**

Install Machine 4 months after receiving order, and provide training not later than one month after installation

**Delivery to**

NASA/GSFC
Building 5
Greenbelt, MD 20771